



PATENT ABSTRACTS OF JAPAN

(11) Publication number: **07167614 A**

(43) Date of publication of application: 04.07.95

(51) Int. Cl

G01B 11/00

H01L 21/027

H01L 21/68

(21) Application number: 05314702

(22) Date of filing: 15.12.93

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(54) ALIGNMENT METHOD AND APPARATUS

(57) Abstract:

PURPOSE: To accurately measure the detection error of the central position of the image generated in every processes by correlating with a simulated curve the relative intensity difference ± 1 st order diffracted light which is measured in every manufacturing processes for mass-production of wafer.

CONSTITUTION: A light emitted from a laser 5 is made incident on the center of an incident iris 13 through a beam splitter 10a to shutter 18, etc., and is cast on an alignment mark 2b. The \pm diffracted light generating through irradiation is selectively passed through a space filter 15, and the center position of a mark 2b image is precisely inspected by a linear image sensor 17. However, when the irregularity of resist coating occurs, the waveform becomes asymmetrical due to the multiple interference of the resist 2a, generating any detection difference. Therefore, a plus or minus 1st order diffracted light intensity is detected 19a and the \pm 1st order diffracted light intensity is regulated according to the ratio of the detected 19b irradiation light intensity thereto, so that the relative intensity difference So may be obtained. The intensity difference So is substituted to the simulated curve which has

already been obtained by a control processing circuit 20, together with respective process data, thereby finding out a detection error ε_0 .

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